

Claims:

1. A method for the production of coated workpieces, comprising the steps of:
 - a) electrodeposition of one or more layers containing at least one metal and/or metal alloy on a substrate, and
 - b) thermal treatment of the coated substrate at a temperature of between 300°C and 1000°C in such a way that at least the surface layer of the substrate and the layer or layers applied in step a) partially and/or completely interdiffuse.
2. The method according to claim 1, characterized in that the substrate of step a) is electrically conductive.
3. The method according to claim 1 or 2, characterized in that the substrate of step a) is a metallic substrate and/or metallized substrate.
4. The method according to claim 3, characterized in that the metallic substrate and/or metallized substrate includes one or more metals, said metals preferably being transition metals.
5. The method according to claim 3 or 4, characterized in that the substrate is selected from the group of substrates including the metals magnesium, zinc, tin, titanium, iron, nickel, chromium, vanadium, tungsten, molybdenum, manganese, cobalt and mixtures and/or alloys thereof.
6. The method according to at least one of claims 1 to 5, characterized in that the layer of step a) is coated from a non-aqueous electrolyte or from an aqueous electrolyte.

7. The method according to claim 6, characterized in that the layer of step a) is selected from aluminum, magnesium, tin, nickel and mixtures and/or alloys thereof.
8. The method according to claim 6 or 7, characterized in that the metal alloy includes an aluminum/magnesium alloy and/or an aluminum/tin alloy.
9. The method according to one or more of claims 1 to 8, characterized in that the temperature and/or duration of the thermal treatment of step b) is selected in such a way that an alloy containing metal of the surface layer of the substrate and metal and/or metal alloy of the coated layer will be formed at least in the boundary area between substrate and coated layer of step a).
10. The method according to one or more of claims 1 to 9, characterized in that the temperature of thermal treatment of step b) is between 400°C and 1000°C, preferably between 450°C and 900°C, and most preferably between 500°C and 800°C.
11. The method according to one or more of claims 1 to 10, characterized in that the duration of thermal treatment in step b) is between 1 second and 10 hours, preferably between 1 minute and 5 hours, and most preferably between 2 minutes and 3 hours.
12. The method according to one or more of claims 1 to 11, characterized in that subsequent to coating the layer in step a) and prior to performing the thermal treatment in step b), the layer is subjected to further treatment.
13. The method according to claim 12, characterized in that said treatment is anodic oxidation, which preferably is anodization of the layer.

14. The method according to at least one of claims 1 to 13, characterized in that the coated workpieces are rack goods, bulk materials, continuous products or molded articles, the coated workpiece preferably being a wire, a metal sheet, a screw, a nut, a concrete anchorage, a machine component part, an engine, an engine part, or a turbine blade.
15. A coated workpiece, which can be obtained according to one or more of claims 1 to 14.
16. The coated workpiece according to claim 15, characterized in that said the coated workpieces are rack goods, bulk materials, continuous products or molded articles, the coated workpiece preferably being a wire, a metal sheet, a screw, a nut, a concrete anchorage, a machine component part, an engine, an engine part, or a turbine blade.

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